

WHAT IS CLAIMED IS:

1           1. An analyzer system comprising a vertical guide,  
2    an instrument holder constrained to move along the  
3    vertical guide and designed to hold at least two  
4    instruments, at least one washing device for the  
5    instruments, the washing device having at least one jet  
6    orifice and a supply conduit for a wash fluid, the at  
7    least one jet orifice being designed to spray the wash  
8    fluid at the instruments; wherein the washing device  
9    comprises at least one wash ring surrounding the  
10   instruments, the washing device being separate from and  
11   movable in relation to the instrument holder, and the at  
12   least one jet orifice being aimed in an inward radial  
13   direction of the at least one wash ring.

1           2. The analyzer system of claim 1, wherein the  
2    washing device comprises a complete, closed wash ring  
3    surrounding the instruments over an angle of 360°.

1           3. The analyzer system of claim 1, wherein the  
2    washing device is constrained for guided movement along  
3    the vertical guide

1           4. The analyzer system of claim 1, wherein the

2 washing device is disposed vertically below the instrument  
3 holder.

1 5. The analyzer system of claim 1, comprising at  
2 least two jet orifices distributed over an internal  
3 circumference of the at least one wash ring.

1 6. The analyzer system of claim 5, wherein the jet  
2 orifices are disposed at substantially equal angular  
3 intervals.

1 7. The analyzer system of claim 5, wherein the jet  
2 orifices are disposed substantially at diametrically  
3 opposite locations.

1 8. The analyzer system of claim 5, wherein the jet  
2 orifices are disposed at angular intervals of at least 10°  
3 and less than 180°.

1 9. The analyzer system of claim 8, wherein the jet  
2 orifices are disposed at angular intervals of 15° to 20°.

1 10. The analyzer system of claim 1, wherein the  
2 washing device has at least one wash ring with at least  
3 one jet orifice disposed on a circumference of larger

4 diameter than an internal opening width of the wash ring.

1 11. The analyzer system of claim 1, wherein the  
2 washing device has at least one wash ring with a common  
3 opening for all of the instruments.

1 12. The analyzer system of claim 1, wherein the at  
2 least one jet orifice has a diameter of at least 0.3 mm.

1 13. The analyzer system of claim 12, wherein the at  
2 least one jet orifice has a diameter of at least 0.5 mm.

1 14. The analyzer system of claim 13, wherein the at  
2 least one jet orifice has a diameter of 0.5 to 0.8 mm.

1 15. The analyzer system of claim 1, wherein the  
2 washing device has at least one wash ring with at least  
3 one jet orifice aimed at a predetermined downward angle

1 16. The analyzer system of claim 15, wherein the  
2 predetermined downward angle is substantially between 15°  
3 and 40°.

1 17. The analyzer system of claim 16, wherein the  
2 predetermined downward angle is substantially between 20°

3 and 30°.

1 18. The analyzer system of claim 1, wherein the at  
2 least one wash ring has a distributor channel for the wash  
3 fluid extending along a perimeter of said wash ring.

1 19. The analyzer system of claim 18, wherein the at  
2 least one jet orifice has an orifice cross-section and the  
3 distributor channel has a channel cross-section that is  
4 larger than the orifice cross-section.

1 20. The analyzer system of claim 19, wherein the  
2 channel cross-section is at least five times as large as  
3 the orifice cross-section.

1 21. The analyzer system of claim 20, wherein the  
2 channel cross-section is ten to fifty times as large as  
3 the orifice cross-section.

1 22. The analyzer system of claim 1, wherein the  
2 washing device has at least two rows of jet orifices  
3 arranged one below the other.

1 23. The analyzer system of claim 22, wherein the  
2 rows of jet orifices are arranged on different wash rings.

1           24. The analyzer system of claim 23, wherein the  
2     washing device comprises wash rings that are movable in  
3     relation to each other.

1           25. The analyzer system of claim 1, wherein the  
2     supply conduit comprises a supply channel extending at  
3     least partially in parallel with the vertical guide.

1           26. The analyzer system of claim 1, further  
2     comprising a centering device interposed between the  
3     instrument holder and the washing device.

1           27. The analyzer system of claim 1, further  
2     comprising a drive source that moves the instrument holder  
3     along the vertical guide.

1           28. The analyzer system of claim 27, wherein the  
2     drive source also moves the washing device along the  
3     vertical guide.

1           29. The analyzer system of claim 27, further  
2     comprising at least one take-along constraint allowing a  
3     limited range of relative movement between the instrument  
4     holder and the washing device

1           30. A drive mechanism for the analyzer system of  
2 claim 1, comprising at least one motor and a programmed  
3 controller device controlling the at least one motor.

1           31. The drive mechanism of claim 30, wherein the  
2 controller device comprises a memory device holding a  
3 program designed to perform at least the steps of:

4           a) lowering the instrument holder and the washing  
5 device to a desired level;

6           b) performing a measurement;

7           c) vertically moving the instrument holder with the  
8 at least two instruments in relation to the washing device  
9 while the washing device simultaneously sprays the wash  
10 fluid at the instruments.

1           32. The drive mechanism of claim 31, further  
2 comprising a signal-evaluating unit that monitors the  
3 measurement and, when it finds the measurement to be  
4 completed, delivers a signal to initiate step c).

1           33. The drive mechanism of claim 31 where, in step  
2 a), the downward movement of the washing device ends at a  
3 first predetermined height, while the downward movement of  
4 the instrument holder is continued to a second

5 predetermined height.

1           34. The drive mechanism of claim 31, wherein the  
2 drive mechanism is designed to raise the instrument holder  
3 and the washing device to a predetermined starting  
4 position after step c) has been completed.

RECEIVED  
FBI  
JAN 11 1964